



ON GUARD SAN FRANCISCO BAY GROUP 2

Group 2's Monthly Magazine

Welcome to On Guard

By Lt Col Noel Luneau, Public Affairs Officer Group 2

Welcome to the Volume 2, Issue 1 of the Group 2 Magazine - On Guard!

In this edition we remember Col George Ishikata, our PCR Commander and longtime member of Squadron 86. We also have an article on how Group 2 went to the DOGS last month, a great article on Squadron 86's gliding day and numerous updates to all our sections. The answers to November's Mystery Word Search are also posted along with a new Mystery Word Search.

Article Submissions. This is your magazine, and we welcome all your contributions to it with short stories, photos, and short videos of your Squadron or event. We are looking for articles for the **March edition**, due 31 March 21. Please send all articles to the Group 2 website [Here](#).

Also please tag Group 2 on Instagram, Facebook, and Twitter and we will collect posts, stories, and reels there. Tag us on Instagram and Facebook as: @civilairpatrolgroup2. Tag us on Twitter as: @CAPGroup2CA.

Just a reminder that we have a **YouTube** channel for the group so send us any videos that you want to share with the world!

The QR Code to the right is a link to an online version with viewable video clips.



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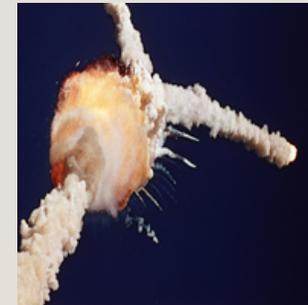
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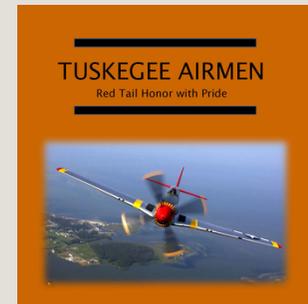
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GENERAL

COL GEORGE K. ISHIKATA - 1962-2021 EXCELLENCE IN ACTION

BY LT COL GRACE EDINBORO - SQUADRON 86 COMMANDER

George Koji Ishikata was born February 22, 1962, in Chicago, Illinois and grew up in San Francisco, California. He attended Roosevelt Junior High and Lowell High School, graduated San Francisco State University with a bachelor's degree in speech and communications studies, and later earned a master's degree in military arts and sciences from the Army Command and General Staff College. George spent the majority of his career in the California Army National Guard and US Army as a Military Intelligence officer, both in the National Guard and in key positions in Washington DC and overseas. Upon retiring from the Army, George started a second career as a Junior Reserve Officer Training Corps instructor at Abraham Lincoln High School in San Francisco, and later assumed the role of Director of Army Instruction for the San Francisco JROTC Brigade.

George married Albulena Demiri in 2010. His life with Lena was complex as they found time to be together while living on separate sides of the country. Although they had no children, he adored his nephew and niece, Leo and Alena, and sister-in-law Linda.

George joined Civil Air Patrol as a cadet in 1977, and it soon became a focal point of his life. As a member of San Francisco Cadet Squadron 86 (Excellence in Action), he achieved meaningful leadership roles in the Cadet Advisory Council and as Commander of California Wing's Cadet Training Group, and participated fully in activities at the squadron, group, wing and national levels. He loved encampments, and served on staff as a Flight Commander (India Flt, 1979), Deputy Commander (Fort Ord, 1980), Executive Officer (McClellan 1980), and CTG Commander (Nellis & McClellan 1981). He attended the Air Training Command Familiarization Course and Cadet Officer School. He earned the Earhart Award.



As a senior member in Civil Air Patrol, George was an esteemed member of the National Cadet Team and proudly served as the Commander of Pacific Region. He commanded San Francisco Cadet Squadron 86 a couple of times, and actively participated in meetings and activities there, even after assuming region command. He served as the California Wing Director of Cadet Programs. He led California Wing's Cadet Officer Basic Course for over twenty years, mentoring over a thousand cadet officers as they explored their own leadership identities. George served as an instructor at CAP's Cadet Officer School and escorted cadets to Australia on the International Air Cadet Exchange. He served in many staff positions at California Wing encampments, and attended activities at the wing, region, and national levels. George's interest in CAP was vast, and he qualified in the Cadet Programs, Aerospace Education, Finance, Emergency Services, Logistics and Safety specialty tracks.



GENERAL

IN MEMORIAM GEORGE K. ISHIKATA - 1962-2021

BY LT COL GRACE EDINBORO - SQUADRON 86 COMMANDER

George commissioned into the California Army National Guard as a Military Police officer in 1985. He served in the 49th Military Police Brigade, 100th Troop Command and 40th Infantry Division, and commanded the 223rd Military Intelligence Battalion (Linguist). George deployed to Iraq, Afghanistan, and Kosovo, with his final duty in the Intelligence, Surveillance & Reconnaissance (ISR) Task Force, part of the Joint Staff at the Pentagon, retiring in 2015.

George lived with a purpose to support and give back to his community. He served on the San Francisco Veterans Affairs Commission and the Japanese American Veterans Association. He worked tirelessly to support the continuation of Junior ROTC in San Francisco schools, and improved the cadet brigade's participation in events and activities.

His accomplishments are numerous, including being the recipient of two Defense Superior Service Medals, the Legion of Merit and Bronze Star Medals, as well as five Meritorious Service Medals. Other military honors include the Federal Asian/Pacific American Council Meritorious Service Award, which he received in 2006. In Civil Air Patrol, he earned the Distinguished Service Award, Exceptional Service Award, Meritorious Service Award, Commander's Commendation, and Achievement Award. He completed Level 5 of the senior member education and training program, Advanced Training Leaders of Cadets (TLC), and other awards.

George passed away of natural causes on December 30, 2021, in San Francisco, CA. George is survived by his wife Lena, brother Chikau and nephew Kameron, cousins, and many dear friends. He left a legacy among JROTC and CAP cadets who will continue to develop their own leadership identities and live up to the values George set of service, loyalty, and integrity.

Please lick [Here](#) to view Col. George Ishikata's Memorial Service.



GENERAL

2021 ON GUARD REVIEW

BY LT COL NOEL LUNEAU - PUBLIC AFFAIRS OFFICER GP. 2

CADETS EARN NRA MARKSMANSHIP BADGES

BY 2ND LT. ROBIN YANG
 JUL ON GUARD - PG. 6

20 cadets attend California Wing’s Group 2 NRA Marksmanship event in Hayward, CA.

Representing seven of the eight Squadrons with cadets in San Francisco Group 2 and ranging in age from 12 to 19, these cadets learned the basics of firearm safety and rifle marksmanship in the classroom before taking to the range. Combined they fired over 2000 rounds from .22LR bolt-action rifles as they earned their Marksmanship badges.

Click [Here](#) to see the full article.



Cadets take aim at the San Leandro Rifle & Pistol range. The regulation A-32 target is 3.3" wide and shot at a distance of 50' away. Photo Credit: 2nd Lt. Yang.

GROUP 2 CHECK PILOTS TRAIN HAWAII PILOTS

BY LT COL NOEL LUNEAU
 JUL ON GUARD - PG. 12

A pair of California Wing check pilot examiners spent 12-hour days from June 14-21 at Kalaeloa Airport on O’ahu to train Hawaii Wings check pilots.



SM Ray Johns, HIWG briefs his sortie to CAWG CPE’s, Capt Keith Breton and Maj Jeff Ironfield. Photo taken by Lt Col Rojo Herrera

Maj. Jeffrey Ironfield and Capt. Keith Breton, members of Tri-Valley Composite Squadron 156, worked with two sets of trainees, those who needed to become check pilots, check pilot examiners and instructor pilots, and those who needed to upgrade to technically advanced aircraft, such as Garmin G1000-equipped planes.

Click [Here](#) to see the full article.



REIGNITE CAP CELEBRATION

BY LT COL NOEL LUNEAU
 AUG ON GUARD - PG. 4

On Saturday, July 17th, 2021, San Francisco Bay Group 2 of Civil Air Patrol held a REIGNITE celebration to honor the resiliency of our members and families over the past year, to welcome our return to in-person training and activities, and to display to our members and visitors different aspects of CAP’s three missions: Aerospace Education, Cadet Programs, and Emergency Services.

Approximately 160 cadets, adult members, parents, and visitors attended this celebration at the Livermore Airport.

Click [Here](#) to see the full article.



Squadron 44’s Color Guard on parade. CAP photo by Lt Col Ken Sturgill, CAWG.

GENERAL

2021 ON GUARD REVIEW

BY LT COL NOEL LUNEAU - PUBLIC AFFAIRS OFFICER GP. 2

**SQUADRON 86
 BIVOUAC**

BY LT COL GRACE
 EDINBORO
 AUG ON GUARD - PG. 12

Over the weekend of 31 July to 1 August, cadets from Squadron 86 were joined by one cadet from Squadron 13 and some Boy Scouts and family members in a bivouac at their squadron's base, a National Guard Armory in San Francisco. This overnight training exercise was the first overnighter the squadron has sponsored, but it won't be the last. The squadron's goal is to get the cadets to a campground to enjoy a full field camping experience with a focus on emergency services training.

Click [Here](#) to see the full article.



Ground team members C/AB Isaac Garcia (Sq 13), Dominic Wong, C/Amn Harrison Wong, C/AB Andrew Ham, C/AB Aaron Ling, and C/2d Lt Emmanuel Nascimento evacuate simulated victim C/2d Lt Carter Wong to safety.
 Photo by Lt Col Grace Edinboro.

SUAS TRAINING

BY LT JOSE ALVAREZ
 AUG ON GUARD - PG. 22

On July 24, 2021, under the supervision and leadership of Captain Hollerbach, Group 2 gathered in the City of Concord, CA to continue the sUAS training and mission readiness with the introduction and addition of the new Skydio X2D.

The team consisted of Capt Karin Hollerbach, Capt Louise Mateos, Capt Henry V Andruss, 1st Lt Kimate Richards, Lt Margaret Salimi, and Lt Jose Alvarez.

Click [Here](#) to see the full article.



Capt Hollerbach introducing the Skydio X2D at Lime Ridge Park, Concord.
 CAP photo by Lt Jose Alvarez, CAWG.

**C/2D LT KWOK FROM
 SQUADRON 192 WINS
 PRESTIGIOUS BALSEM
 AWARD**

BY LT JOSE ALVAREZ
 SEPT ON GUARD - PG. 8

One of the two cadet winners of the Maj. Howell Balsem Civil Air Patrol Public Affairs Exceptional Achievement Awards is **C/2d Lt Preston Kwok** of Squadron 192, who won the **Award of Excellence for External Media Coverage** for the story "Students Soar in Civil Air Patrol," which appeared in the Carlmont High School news media "[Scot Scoop](#)."

Click [Here](#) to see the full article.



Cadets from Squadron 192 listen to a safety briefing from Captain John Heldt. This is always required before cadets go into the air and fly a CAP plane.
 Photo by Preston Kwok.

GENERAL

2021 ON GUARD REVIEW

BY LT COL NOEL LUNEAU - PUBLIC AFFAIRS OFFICER GP. 2

WHERE'S WALDO?

BY CAPT STEVE SWALE, SQ 80
 SEPT ON GUARD - PG. 19

Since August 25, 2021, Civil Air Patrol aircrews have been flying our two "Waldo Ultra 50" systems over the Caldor, Monument, and Dixie fire burn areas in Northern California to furnish high resolution aerial imaging to the California National Guard.

Operations are based out of Group 5, Composite Squadron 14 headquarters at KSAC (Sacramento Executive Airport), and have included Group 2 aircrews and base staff specialists from the entire California Wing. This article is intended as a pictorial description of the Waldo Ultra 50 system from the perspective of Group 2 operators during recent NorCal operations to better acquaint our members with this national capability.

Click [Here](#) to see the full article.



Caldor fire from ~11,000' with southerly wind clearing smoke from imaging area. Photo by SM S. Vasudevan.

2021 ULTIMATE BEAR AND WINGS CHALLENGE

CADET PROGRAMS
 OCT ON GUARD - PG. 12

Last weekend on September 17-19, Squadrons across California sent teams to the Sierra Christian Camp in Posey to compete in the Ultimate Bear and Wings Challenge (UBWC). This year, Squadron 44 took first place overall, Squadron 18 took second place overall.

Priority #1: For Cadets and Senior members from local squadrons to come together at a Wing level activity to socialize, have fun, renew relationships built at other activities, and create new relationships that will last for a lifetime.

Priority #2: The competition.

Click [Here](#) to see the full article.



For the 8th year in a row a Sq. 44 team accepts the gold cup for 1st place overall. This year the Los Diablos team posed for their acceptance photo with the UBWC Commandant of Cadets (2d Lt Kendal Grossgold, left) and the UBWC Cadet Commander (C/1st Lt M. Hockel, right). Photo by C/SMSgt Benjamin Lee, UBWC Public Affairs NCO.

1st NORTHERN CALIFORNIA sUAS MISSION AIRCREW SCHOOL

BY 2D LT JOSE ALVAREZ
 OCT ON GUARD - PG. 24

The first Northern California sUAS Mission Aircrew School was held on September 18 and 19, 2021 at the Alameda County Sheriff's Office Regional Training Center in the City of Dublin, CA.

The objectives for this training weekend were to complete all requirements for Technician Rating for senior members and cadets, and for sUAS pilots to complete their advanced training, practice and sharpen their skills on search and rescue maneuvers and automation, and, for those who were able to, complete their form 91u.

Click [Here](#) to see the full article.



Lt Col Hamill, Capt Rivas. Photo by Lt Howard.

GENERAL

2021 ON GUARD REVIEW

BY LT COL NOEL LUNEAU - PUBLIC AFFAIRS OFFICER GP. 2

HIGH ALTITUDE BALLOON CHALLENGE FLIES

BY CAPT V. HENSON
OCT ON GUARD - PG. 26

Completing the CAP High Altitude Balloon Challenge required the Cadets to make a one-slide report for each of the experiments they sent to space, giving the scientific analysis and conclusions for the experiment. While several Group 2 squadrons participated in the Challenge, the outstanding performance in Group 2 was turned in by Squadron 10, completing and reporting on nine experiments! Here, and on the next page, are their one-slide reports.

Click [Here](#) to see the full article.

Battery Voltage in Space

Testable Question:
Will sending a battery into space affect the voltage difference that it provides?

Hypothesis:
The conditions in space will degrade the batteries and overall cause permanent damage due to the long exposure in decreased temperatures, UV radiation, and loss of pressure.

Hypothesis supported by data?
The hypothesis is not supported by the data; there was no significant difference between the voltages of the two batteries, and the batteries suffered no permanent damage.

How would you improve your experiment?
The experiment can be improved by sending more batteries to space, or by using different types of batteries such as AA, AAA, or D batteries.



Both batteries worked in space. Neither battery showed significant permanent damage. The voltage left in the battery in space was the same as the control battery.

Grade HS Subject: Physics
Mission Link: <https://tracking.stratostar.net/m>

SQUADRON 86 GOES “NAVY”

LT COL GRACE EDINBORO
NOV ON GUARD - PG. 11

Go Navy – Beat Army! Cadets from San Francisco Cadet Squadron 86 participated in San Francisco Fleet Week on October 10th.

As part of their quarterly “Armory Bivouac”, cadets, seniors and a few parents spent the day enjoying what the US Navy had to offer – ship tours, military equipment exhibitions, a STEM Village, and an awesome airshow.

Click [Here](#) to see the full article.



Squadron 86 participants on the deck of the USS Rushmore. (L-R: Front: C/Amn Zorianna Mui, C/Amn Isaac Honikman, C/A1C Harrison Wong, C/Amn Andrew Ham, George, 2d Lt Larry Wong, Navy Chief, Back: Lt Col Grace Edinboro, Navy Chief, C/MSgt Toby Lee, C/TSgt Andrew Hui, 1st Lt Andrew Ceronsky, C/A1C Benjamin Chow, C/A1C Justin Loo, C/SMSgt Ainsley Wong, Capt Remi Nadeau, C/A1C Aaron Ling, Wly Anderson, C/AB Jason Viernes, C/2d Lt Carter Wong.

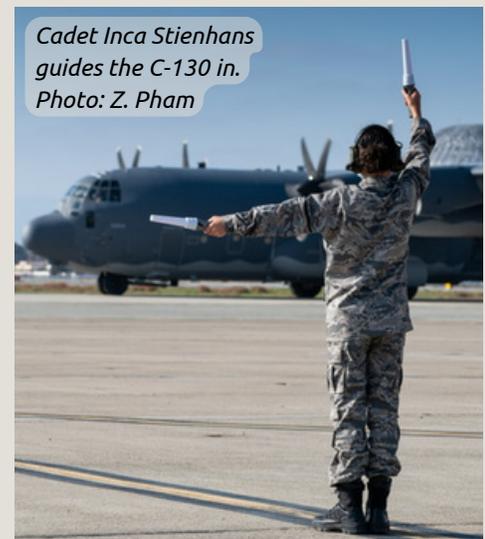
FLYING THE C-130 WITH THE CA ANG

BY 1ST LT K. KALIDOSS
AND CAPT V. HENSON
DEC ON GUARD - PG. 21

An eagerly anticipated day for Group 2 began with our collaboration with the 129th and 130th Air Rescue Wings of the California Air National Guard at Moffett field. The CANG was magnanimous in working with CAWG CAP to supply cadets and senior members the opportunity to fly on their airframes.

The 129th Air Rescue Wing graciously offered to provide our members with military incentive flights on their C-130J Combat King II airplane. Additionally, the CANG offered O-rides on their UH-72A Lakota helicopter that is used for ParaRescue operations.

Click [Here](#) to see the full article.



Cadet Inca Stienhans guides the C-130 in. Photo: Z. Pham

CADET PROGRAMS

2021 STORIES

**A 2021 STORY: PRESENTED BY
 SQUADRON 10 MEMBER C/SRA DJONI
 MURESAN**

My sister, C/SMSGt Muresan, and I, C/SrA Muresan went to North NCOS in October. Here I learned all about the CAP program and duties as a leader. I also learned a lot about calling commands, following schedules, and how to teach. I had the opportunity of acquainting myself with a bunch of amazing cadets who I learned from and alongside. I was able to learn so much about the importance of cadre, and every staff member of an ILP. The main thing that made this event memorable was all the people I met. There were a lot of cadets I met that demonstrated wingmanship and a large amount of friendliness. The cadets made it feel all the better as we were helping each other get through all the hardships.

This November I was able to catch a flight on a C130. I was very happy and ecstatic when I found out about this as it felt like a one in ten lifetimes opportunity. This flight was even cooler on it as the back opened during the flight, and we flew right over the bay for photo opportunities of Alcatraz, the Golden Gate Bridge, and more. This was one of the planes I had on my bucket list to fly on in my life and I was so happy for this opportunity!



2021 STORIES

**A 2021 STORY: PRESENTED BY
 SQUADRON 10 MEMBER CADET
 SENIOR MASTER SERGEANT GRACE
 MURESAN.**

Cadet Senior Master Sergeant Grace Muresan. This September my brother, C/Sra Djoni Muresan and I, C/SMSGt Grace Muresan attended the California Wing Conference. I was asked to read the POW-MIA table at the banquet, and my brother to lead the Pledge of Allegiance. The photos attached are from the CWC banquet at the Hyatt in Sacramento and with Lt Col Mark Hamill, Brig Gen Regina Aye, and Col Ross Veta.

The Wing conference was an amazing experience overall, my brother and I attended a number of interesting courses and met so many inspiring people. This memory is really important to me because I remember feeling nothing but respect from the people that run the wing and all the cadet programs that I am able to experience. I was already really passionate about CAP but after that, I feel so motivated to continue engaging in CAP activities.



CADET PROGRAMS

RADIOS, CADETS, AND P25, OH MY!

BY CAPT. CHRISTOPHER WELCH, CAWG-ENCAMPMENT-DC

All go to Encampment and learn many new things. Some learn to march. Some learn how to lead 15, 20, even 50 cadets. Some learn how to proceed though their CAP career.

I learned something unexpected.

P25. Also known as "digital mode" on every CAP 2-way radio. The EF Johnsons have it, and the new Motorola APXs have it. It's standard to use in fire, police, and even military departments across the US, however CAP has been reluctant to use it for it's missions, at least ones I've attended. Instead of the traditional analog "sine wave" RF transmission of FM signals, P25 uses a stream of ones and zeros to "encode" the radio signal and send it as digital. This gives a signal that has no static in the audio and cleaner, usually comes out louder, and some will say that the range is improved (others say it's more sensitive to losing signal at long range), with the side effect that the audio is a flatter, more "muffled" sound in the voice.

At CAWG Encampment this year, we had 3 "squadrons" and 5 flights per squadron. Each squadron had it's own simplex radio channel to talk to each other without disturbing another squadron. For an experiment, I put one squadron, the 149 CTS, on channel CC2-P25 and asked those using radios to report back to me with their thoughts. I thought that by day 3 or 4 they would be asking to go back to analog channels. Boy was I suprised of the feedback. The Squadron CC said it was super clear to hear his commanders talk. The First Sergeant loved the lack of static. Flight Commanders all preferred P25, even when asked about the "muffled" digital sound. I was even asked by other members in Support to switch their radios to digital mode. By the time Encampment was over, about half of the 40 or so radios where in P25 mode.

So who knew? I honestly didn't expect the cadets, twelve to twenty year olds, to actually prefer an unused mode of our radios. Perhaps we can take these trials and use them with seniors at ES missions? Naaaah.

Wait, out! [More info on CAP's Radio Network [Here](#) Ed.]



A Cadet Cadre officer at 2021 CAWG Encampment returning several of the new APX Radios for charging. The new radios where extremely well received by the cadets due to their smaller size, audio clarity, and professional image.



A case of Civil Air Patrol's new APX 4000s, getting packed at the end of Encampment. The new radios feature several improvements over the older EF Johnsons such as user friendly menus, color screens, voice announcements, and GPS location sent with each transmission.

CADET PROGRAMS

SQUADRON 86 GOES GLIDING

BY CAPT. REMI NADEAU, SQ. 86

Four CAP cadets from San Francisco Squadron 86 received glider orientation rides on Sunday January 16th at the Byron Airport. Cadets Kayden Chan, Arthur Liang, Emily Liang and Levi Lum rode in their new squadron’s CAP van from San Francisco to arrive at the Byron Airport just before 0900.

Although the local Byron ground fog caused a delay, all the cadets were able to fly once, after the fog lifted. SM Emmanuel Sansano, who acted as one of the Ground Safety Officers, was also able to get airborne that afternoon. The event was considered a success, thanks to the volunteer spirit and expert flying skills of CAP’s glider pilot Capt. Van Henson and tow-pilots Lt Col Noel Luneau and Capt. Michael Gross.

Cadet Emily Liang exclaimed after her ride: “That was amazing! I want to go again!” Cadet Levi Lum described his experience as “beautiful and relaxing.” Cadets Arthur Liang and Kayden Chan were overwhelmed with joy of having slipped the surly bonds of earth and lived to tell about it. All the cadet flyers agreed that it was a most excellent adventure and plan to encourage their fellow cadets to sign up for the next O-ride.



Cadets position the Super Blanik L-23 glider for ground towing. Photo by Lt Col Luneau.



Captain Van Henson instructs cadets on attaching the tow line. Photo by Lt Col Luneau.



Cadet Arthur Liang checks the controls during pre-flight. Photo by Lt Col Luneau.

CADET FLIGHT TRAINING

EAA - AIR ACADEMY CAMPERSHIPS

EAA invites those who are interested in pursuing flight or a career in aviation or aviation related/STEM fields. They encourage individuals who are well-rounded, involved in their school or community, and interested in the world of aviation to apply for an EAA Scholarship.

Please fill out an application for an EAA scholarship during one of the cycles listed below when they are available:

CURRENT OPEN CYCLE:
 Jan. 10, 2022 – Apr. 1, 2022: Air Academy Camperships

Apply [Here](#).

FUTURE CYCLES:

Mar. 1, 2022 – June 1, 2022:
 Flight Training Scholarships (for those starting flight training July 1 – Dec. 31)

Sept. 1, 2022 – Nov. 1, 2022:
 Flight Training Scholarships (for those starting flight training Jan. 1 – June 30)

Nov. 15, 2022 – Jan. 31, 2023:
 Post-Secondary Scholarships



CURRENT FLIGHT SCHOLARSHIP POSTINGS

The Ninety-Nines – a professional organization dedicated to female aviators has been Inspiring women pilots since 1929.



The Ninety-Nines offer many scholarship opportunities throughout the year.

Scholarships **do not** require students to have been a member the 99s. Click [Here](#) for more Info on the scholarships and the Oakland Chapter.

The National Organization also has scholarships for members of the 99's. Click [Here](#) for more Info.

The Air Force Association grants scholarships to members for Flight Training and various other purposes.



The Air Force Association grants scholarships to members for Flight Training and various other purposes.

AFA accepts scholarship applications between **December 1 and April 30**.

Check out the 2022 Destin Flight Works Scholarship [Here](#), and the 2022 Pentagon Federal Credit Union Scholarship [Here](#).



Join the Soaring Association of America for free as a SSA Cadet If you are age 10-18 and a US Resident. member benefits include:

- Scholarships
- Junior Camps
- SOARING Magazine Archive
- Online Forums
- Member Messaging
- SSA Decal & Swag
- SSA Membership Card
- SSA Training Badges
- State Soaring Records
- Group Insurance

Join for free [Here](#).

The SSA has many gliding scholarships that are listed [Here](#). **The deadline to apply is March 31.**

PRIVATE PILOT PATHWAY OPPORTUNITIES FOR CADETS

NHQ PRESENTATION

View the below presentation from NHQ that provides an overview of the various ways of becoming a Private Pilot inside or outside of CAP.



CADET FLIGHT TRAINING

WENDOVER GLIDER FLIGHT ACADEMY 2021

BY LT COL NOEL LUNEAU

Great News for Cadet Staff, CFG's, Tow Pilots, Winch Operators, etc.

STUDENT APPLICATIONS ARE NOW CLOSED BUT WE ARE LOOKING FOR STAFF!

For Scholarships see the next page

The Nevada, Utah, California, and Idaho Wings are pleased to announce that the Wendover 2022 Glider Academy is underway!

What does this mean? For cadets, this means that a fantastic opportunity to take a step closer in achieving your flight goals has opened up! The Wendover Glider Flight Academy is an educational and flight training experience for CAP cadets. It features one week of flying, ground school, and other activities to help cadets take another step in reaching their Private Pilot Wings!

Where is it? - The academy will be held at the historic Wendover Army Air Base in Wendover, Utah!! (Wendover Airport 345 Airport Way, Wendover UT 84083)

When does it start? - The first day of the academy will begin on July 2nd, 2022, and the graduation will be held on July 9th 2022. (Staff are expected to arrive on the 30th of June)

Who should be there?

*(Cadet Staff) Encampment graduates preferably with past aviation experience, who like teaching, guiding, and helping the next generation of aviators!

*(Senior Members) All those who are CFG's, Tow Pilots, Winch Operators, or those who would like to volunteer their time into helping with the operation of this Academy!

*Senior Staff and Personnel should contact: C/Lt Col Altunin – Project Coordinator and Lt Col Elizabeth Tattersall - Lead CFG at the emails below and above cc'd: ivan.altunin@nvwgcap.org elizabeth.tattersall@nvwgcap.org

***Cadet Staff should contact:** C/Capt Luz Sandoval - Cadet Coordinator luz.sandoval@nvwgcap.org (Registration for staff is \$150.00)

Keep in mind the 20 student slots fill up fast and first priority will be given to the top 5 applicants from each of the participating wings (Utah, Nevada, Idaho, and California). If there are still slots left, priority is given to Rocky Mountain & Pacific Region Cadets, then in the event slots are still open, cadets from outside of either region may be selected. Registration cost for students will be \$800.00, local flight scholarships may be an option for financial aid for cadets.

Thank you and we hope to see you there!

Wendover 2022 Glider Flight Academy Planning Team

SQUADRONS



SQUADRON 10 PALO ALTO

CYBERPATRIOT 22 JAN 2022

22 January 2022 - Cadets Cayden Gu, Samhita Srivatsan, Grace Muresan, Esme Chen, and Maxim Manokhin of Civil Air Patrol - Jon E. Kramer Composite Squadron 10 - Palo Alto compete in the CyberPatriot National Youth Cyber Defense Competition XIV in the Platinum Tier Semi-Finals! They have taken on various challenging roles as IT security specialists troubleshooting, fixing, and hardening defenses against vulnerabilities, attacks, and keeping services running San Francisco Bay Group 2, California Wing, Civil Air Patrol California Wing Cadet Programs.



SQUADRON 13 WATSONVILLE

PROMOTIONS

Squadron 13 had a number of promotions as follows:

Curry: C. Warmkessel & T. Tims
Arnold: S. Cope & I. Garcia
Goddard: S. Low
Armstrong: L. McKinnon



SQUADRON 18 HAYWARD

WREATHS ACROSS AMERICA 18 DEC 2021

Please help us remember & honor on Dec. 18th at 08:45, 2021 by sponsoring wreaths or volunteering! SQ18 has a goal of 100 wreaths this year so check out the link in our bio to help out and save the date to volunteer!



★ December 18, 2021 ★
National Wreaths Across America Day

Help the East Bay Cadets honor our local heroes!

Sponsor a wreath today to be placed on a veteran's grave this December at Golden Gate National Cemetery.

Just scan the QR code to your right with your smart Phone camera or use the link below to make a donation online.

<https://bit.ly/sq18-waa>

sq18firebirds TheirLegacy2021

ON GUARD SAN FRANCISCO BAY GROUP 2

SQUADRONS



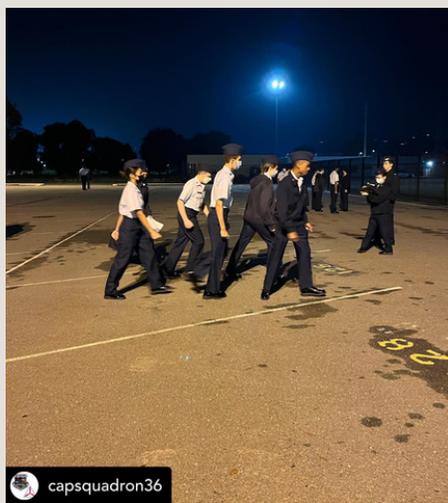
**SQUADRON
36
SAN JOSE**

**LEADERSHIP
7 DEC 2021**

In this week's leadership meeting, cadets began the evening with drill and ceremony. Later, Chief Pham lead a class on promotions for Phase 1 cadets while Captain Lawrence lead a class on drill for Phase 2 cadets. #civilairpatrol#capcadet #goflycap #leadership



capsquadron36



capsquadron36



**SQUADRON
44
CONCORD**

**WREATHS ACROSS
AMERICA
DEC 2021**

Sq44 members, including the Color Guard, attended the annual Wreaths Across America remembrance ceremony at SF National Cemetery.

Diablo Composite Squadron 44 was very honored to receive four recognitions for our member's participation this year.



**SQUADRON
80
SAN JOSE**

**TUSKEGEE AIRMAN
PASSES**

Brigadier General Charles Edward McGee (December 7, 1919 – January 16, 2022) was an American fighter pilot who was one of the first African American aviators in the United States military and one of the last living members of the Tuskegee Airmen. McGee first began his career in World War II flying with the Tuskegee Airmen, an all African American military pilot group at a time of segregation in the armed forces. His military aviation career lasted 30 years in which McGee flew 409 combat missions in World War II, the Korean War and Vietnam War.

For his service, McGee received the Distinguished Flying Cross with two oak leaf clusters and the Bronze Star Medal, along with many other military honors. In 2007, as a member of the Tuskegee Airmen, McGee received the Congressional Gold Medal. In 2011, he was inducted into the National Aviation Hall of Fame and in February 2020, was promoted from colonel to brigadier general.



SQUADRONS



SQUADRON 86 SAN FRANCISCO

GLIDING AT BYRON
16 JAN 22

CAP Gliding and tow pilot training at Byron Airport

Read more [Here](#)



SQUADRON 156 TRI-VALLEY

AWARDS
DECEMBER-JANUARY

Congratulations, C/MSgt Paterson on your AFA Award for Outstanding Civil Air Patrol Squadron Cadet!



SQUADRON 188 OAKLAND

GROUND TEAM
TRAINING 11-12 DEC 21

Some great Ground Team training at the squadron this past weekend! Group 2 GTM3 Fam & Prep Sign Off on Sunday December 12, 2021



Cadet Second Lieutenant Samantha Wang of the California Wing's Tri-Valley Composite Squadron 156 was presented with the prestigious the General Billy Mitchell Award.

Read more [Here](#)



SQUADRON 192 SAN CARLOS

SM Nicolas Pegis completed Level 2, Part 1. Capt Stephen Collins achieved Master rating in AE specialty track, while 2d Lt Cabot Sheley achieved Senior rating in AE specialty track. Promotions: Jonathan Gerzanics to C/MSgt; Noelle Madden to C/TSgt; Marc Chemtob to C/A1C; Nathan Hsiung to C/A1C; Ascher Lafayette to C/A1C; Daniel Hsiung to C/Amn. Capt (Dr) Ian Harris completed MS ground school.



EMERGENCY SERVICES

CAP'S CANINE VOLUNTEER PARTNERS TAKE TO THE AIR

BY 2D LT DAVID MCCROSSAN, CAP SQ. 44 PAO

Aircrew from across Group 2 spooled up February 5, 2022, to support a long-standing partner of CAP, California Rescue Dog Association (CARDA). CARDA's mission is to train, certify, and deploy highly-qualified search dog teams to assist law enforcement and other public safety agencies in the search for lost and missing persons. CARDA is the largest and most geographically dispersed of the three search dog groups in California that are direct resources of the State of California Office of Emergency Services (Cal OES). CARDA provides search dog services to all public service agencies at no charge.

In the first such training mission prior to the pandemic, units from across the San Francisco Bay Area came together in a well-choreographed operation of aircraft and pilots: Captain Karen Hollerbach of Sq. 188 piloted the Sq. 44 Concord plane, Capt Michael Gross of Sq. 10 Palo Alto flew the Sq. 188 Oakland plane, and Sq. 10 Palo Alto Capt Anthony Stieber along with Capt John Heldt piloted both planes at Sq. 80, San Jose. CAP hosted nine experienced handlers on multiple orientation sorties for their experienced (and some not so experienced) canine fliers. The goal of the training mission was to familiarize both handlers and dogs and prepare for future search missions supported by CARDA.

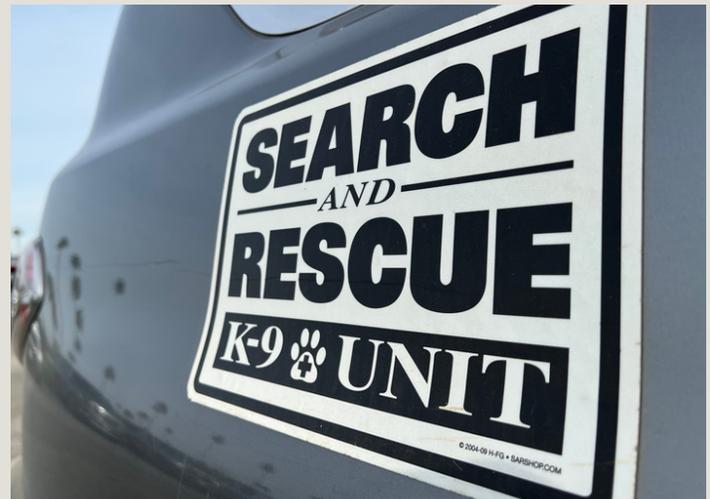
Trained specialist dogs are a familiar sight to many CAP Emergency Services ground team search missions when working alongside local emergency services personnel such as the County Sheriff's department. Operating in an area search or specific target search role, these unique animals come into their own with their highly developed tracking skills.

As he made his way to board the warmed-up Cessna 182 of Sq. 44 on the Concord ramp with his eager four-year-old 'Zoom' search dog in high-viz harness, Jerry Del Rio shared some insights from his 15 years working with CARDA on search missions. "We get called out to all kinds of search locations, some of them very remote, in the northern part of the state. Endurance is a key requirement for both dog and handler. Some of our younger volunteers may head out prepared to maintain self-sufficiency for themselves and their dog for 24 hours straight, in remote terrain up to 7,000 ft elevation."

Continued...



*Trained specialist dogs like Hope on a training mission at Sq. 44, Concord, CA, often work alongside local emergency services personnel such as the County Sheriff's department. Operating in an area search or specific target search role, these unique animals come into their own with their highly developed tracking skills. Some can trail a scent up to 96 hours old.
Photos by 2d Lt David McCrossan.*



EMERGENCY SERVICES

CAP'S CANINE VOLUNTEER PARTNERS TAKE TO THE AIR

BY 2D LT DAVID MCCROSSAN, CAP SQ 44 PAO

Jerry also highlighted the importance of the orientation flights with CAP "Our dogs and handlers do train regularly with other emergency services departments, and many have flown in helicopters. The smaller fixed wing aircraft flown by CAP create a new experience for many of these dogs. We need to know that they're ready and prepared for their search mission when they land. That means they need to be comfortable and undistracted by the experience of flying in a CAP plane. This training helps them maintain their focus."

On the ground, CAP members had lots of questions - and many answers - from the CARDA volunteers participating in the training mission. "One of the most common questions we hear is: are all breeds of dogs equally suited to this search role?" added Cheryl Patelzick, as she readied for the preflight briefing with her three-year-old Ridgeback mix 'Hope', already a veteran of several searches. "Most breeds are capable of the requirements our missions demand. It's a common myth, supported perhaps by the dogs used in movies, that bloodhounds are the ideal search dog with the best scent trailing skills". Cheryl added: "While most dogs are trainable, certain breeds do of course bring their own strengths, for example herding dogs in an area search. Not all breeds have the same tolerance for heat. And there are some breeds, like the terriers, that are ultra-focused on the target."

"How did CARDA manage during the intense months of the pandemic?". Cheryl and Jerry shared: "one of the toughest parts of the restrictions were the need to train individually rather than in groups, for almost a year. However, we still continued on callouts generated by Cal OES by and directed to our local agency partners".

All agreed that the training flights provided by CAP across several Northern California locations were invaluable in preparing dogs and handlers for the tasks, and specifically helping some with passing their required Mission Ready certification for Cal OES.

Continued...



An eager CARDA search dog Zoom and mission pilot Capt Karin Hollerbach of Sq 188 bonded before the excitement of the training flight at Sq. 44, Concord. Photo by 2d Lt David McCrossan.



CARDA handler Ivan Gallo boards a training flight at Sq. 188, CAP Oakland. Photo by 1st Lt Alexei Roudnev.



Mission pilot Capt Karin Hollerbach of Sq. 188 checks fuel levels between sorties on a training mission for California Rescue Dogs Association (CARDA) at Sq. 44. Photo by 2d Lt David McCrossan.

EMERGENCY SERVICES

CAP'S CANINE VOLUNTEER PARTNERS TAKE TO THE AIR

BY 2D LT DAVID MCCROSSAN, CAP SQ 44 PAO (...CONTINUED)

One newbie to the training mission was a 10-month Kelpie mix puppy Yindi, with her CARDA handler Kathy Gaughen, bringing 17 years of experience in searches. "This is the best time to start the dog's training, although we do sometimes bring dogs into the program that are a little older, but generally before age two".

As the Sq. 44 training flights wrapped up for the day, Jerry shared some insights, which struck a chord with some of the CAP audience (perhaps thinking about the value of cadet programs): "My first search dog was a juvenile Australian Shepherd. He was restless, rather ill-disciplined, and restless around the house. A few months later he was, focused, disciplined and had an even, mature temperament. He was ready for his first mission."

When asked about the biggest takeaways from the training event, he responded: "CAP volunteers were out here today supporting fellow-volunteers in CARDA, in support of the shared public safety mission: when the next real search arrives, we all know we'll both be ready."



CARDA handler Jerry Del Rio with search dog Zoom undergo a preflight briefing with mission pilot Capt Karin Hollerbach of Sq. 188 for a training flight at Sq.44, Concord, CA on February 5, 2022 Photo by 2d Lt David McCrossan.



10-month Kelpie mix puppy Yindi, on the flight line at Buchanan Airport. Photo by 2d Lt David McCrossan.



Newbie to the training mission was a 10-month Kelpie mix puppy Yipi, with her CARDA handler Kathy Gaughen, bringing 17 years of experience in searches, briefing for a training mission at Sq. 44. "This is the best time to start the dog's training". Photo by 2d Lt David McCrossan.

EMERGENCY SERVICES

CAP'S CANINE VOLUNTEER PARTNERS TAKE TO THE AIR

BY 2D LT DAVID MCCROSSAN, CAP SQ 44 PAO (...CONTINUED)



10-month Kelpie mix puppy Yindi, watches intently as a CAP Cessna 182 departs on a training mission for California Rescue Dogs Association (CARDA). Photo by 2d Lt David McCrossan.



CARDA handler Miyuki Onnagawa boards a training flight at Sq. 188, Oakland, CA. Photo by 1st Lt Alexei Roudnev.



CARDA handler Jerry Del Rio with search dog Zoom prepare for a training flight at Sq. 44, Concord on February 5, 2022: "We need to know that the search dogs are ready and prepared for their search mission when they land. That means they need to be comfortable and undistracted by the experience of flying in a CAP plane. This training helps them maintain their focus and be mission-ready." Photo by 2d Lt David McCrossan.



CARDA handler Ivan Gallo demonstrates the calm and focused temperament of his search dog with mission pilot Capt Michael Gross at Sq. 188. Photo by 1st Lt Alexei Roudnev.

EMERGENCY SERVICES

WMAO - A GREAT WAY TO GET STARTED IN EMERGENCY SERVICES

BY CAPT VAN HENSON

Wanna be a WMAO? We pronounce it "whammo," and it turns out that it stands for "*Wing Mission Alerting Officer*." The email message seeking a volunteer said [slightly edited]: "WMAO is the '911 Operator' for the California Wing. The duty is not difficult, but is one of the most important duties in all of Civil Air Patrol. The WMAO is the critical link in the chain of events that initiates a mission to search for missing aircraft and people. The service Civil Air Patrol provides is credited with saving over 100 lives each year. **Every one of these lifesaving missions was made possible by a volunteer WMAO.** Someone just like you or me, who didn't just talk about CAP's most critical mission; but believed in it and participated in it."



The KGOO airport east of Grass Valley CA. Two of the AFRCC "locations" of the ELT are marked by the red pointers, and were given to the IC.

With that, I was sold, and volunteered for my 24-hour watch. As it happened, I had already taken the day off work, but that would not have been necessary. As long as you can be with your phone and can drop everything to answer it, you're good to be a WMAO.

I was given links to the necessary training: just two five-minute videos to watch. It's an easy job - wait for a phone call from the Air Force Rescue Coordination Center (AFRCC); if it comes, take down the information, then find an Incident Commander (IC), give that person the information, then report back to the AFRCC with the name and contact information of the IC. That's it. That's all.

So why was I hoping that the call *wouldn't* come? Simple: I was nervous, and didn't want to screw up and ruin a possible life-saving rescue mission! But the call DID come, and I found out that it is quite easy to do the job, and pretty difficult to screw it up!

When the call came, T/SGT Talbot of the AFRCC gave me the information -- the mission number (AFRCC had already opened it in WMIRS) and told me the type of mission: an ELT (Emergency Locator Transmission) had been heard in the vicinity of KGOO (Nevada County Airport near Grass Valley, California) several times. AFRCC had notified the airport, but airport personnel could not hear or locate the beacon, so AFRCC called the WMAO. When I had all the information my job was to find an IC. I was still pretty nervous - while making a time conversion I subtracted 7 hours from 1730 Zulu and came up with 1230 -- and I'm a mathematician! But T/SGT Talbot was very gentle in correcting me -- he's probably used to dealing with nervous CAP first-timers!

In the old days I would have been given a lengthy list of potential ICs to call, one by one, until I found an IC willing to accept the mission. But now that part is automated - I pressed the right button on the WMAO tool in the *PCR Mobile Tools App*, and the calls were made automatically. The system went to work and shortly I was connected with Maj Powell of Sq. 150 who took the information down and gave me his contact information. I relayed that information back to T/SGT Talbot at AFRCC, and my part was done! Easy-peasy!

As with most ELTs, it turned out to be a false alarm - but it *could* have been the start of a lifesaving SAR, and afterward I felt really good about being part of a real mission that could have saved lives! That feeling hasn't left me, and has spurred me to get deeper into Emergency Services and start the Mission Scanner training. For getting into Emergency Services, serving as WMAO is a great way to start!

EMERGENCY SERVICES

SUAS UPDATE

BY CAPT HOLLERBACH AND LT COL MATARRESE

On Saturday, 29 January, 2022 San Francisco Gp. 2 members Capt Louise Mateos (UASMP Trainee), Capt Karin Hollerbach (Instructor Pilot), and Lt Col Dennis Matarrese (UAST Trainee) conducted sUAS training at Lime Ridge Open Space in Concord.

Long time CAP member Lt Col Dennis Matarrese participated as a UAST Trainee on this sUAS training at the Lime Ridge Open Space with Captain Louise Mateos as pilot and Captain Karin Hollerbach as instructor.

His duty was to assist the pilot with the checklists, maintain the 109u log, maintain visual contact with the sUAS drone when airborne, keep a safe environment in the area and other tasks as needed.

Lt Col Matarrese described that "The sortie was flown over an open field using Drone Deploy. The location used for the base of operations was on the side of a hill and that this provided a sense of a 'real world' operations."

The team also flew a second sortie in a depression in a hillside. This provided the team with the opportunity to test the drone's alerting functions during a flight close to a hill.

What Does DroneDeploy Do?

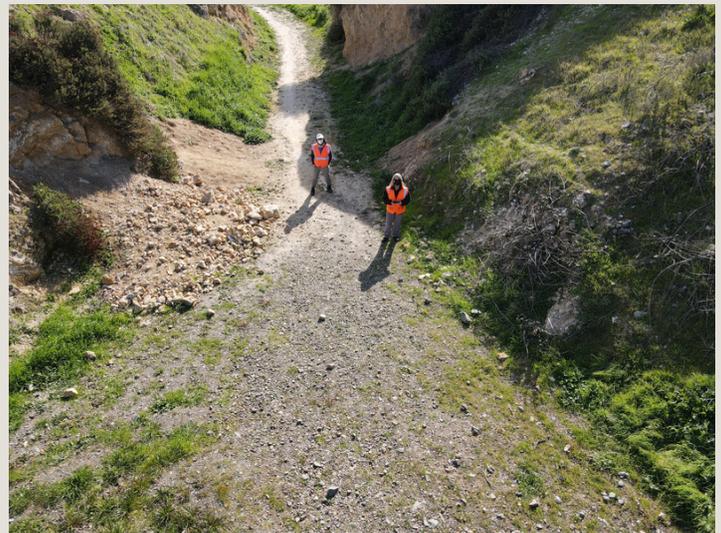
The DroneDeploy solution equips users with powerful digital reconstruction tools to simplify workflow and streamline processes, saving time and money along the way. Their software allows users to harness drone-provided visual data to gain a competitive advantage over adversaries and put focus squarely on critical job functions.

Simplifying flight planning, site inspections, and more are what DroneDeploy does best, and to further clarify the in's and out's of making drone technology work for users, they've created this complete how-to guide.

Click [Here](#) for more Information.



Capt Louise Mateos (UASMP Trainee) and Lt Col Dennis Matarrese (UAST Trainee) ready the sUAS for a flight. Photo by Capt Karin Hollerbach.



Capt Louise Mateos (UASMP Trainee) flying, and Capt Karin Hollerbach (Instructor Pilot) observing, flies the sUAS in challenging terrain. Photo by Capt Mateos via her sUAS.

AEROSPACE EDUCATION



NASA'S DARKEST HOURS AND NASA'S DAY OF REMEMBRANCE

BY LT COL DEE CHESTER, ASSISTED BY CAPT VAN HENSON

Space flight has become so commonplace that it can be hard to remember that only 60 years ago it was often thought to be impossible, and that early space flights were fraught with danger. And as with any exploration of a human frontier, whether it be expansion across unknown continents, exploration of the ocean deeps, or man's conquering of the air, the history of space exploration is dotted with a few occasions when everything went wrong and brave explorers of the heavens paid with their lives. For NASA, three tragic accidents have taken the lives of 17 astronauts.

Because the accidents all happened in the last few days of January or the 1st of February, NASA designates a day, every year, in late January to pay homage to these courageous people who gave the ultimate sacrifice to advance our understanding of Space. January 27 was NASA's Day of Remembrance for 2022. Many of our Senior members are old enough to recall some (or all) of these three fateful days; very likely those members remember exactly where they were when they heard the terrible news. For those younger members who weren't around, we offer this summary of the events, in the hope that the memory of these heroes will live on, and the lessons of their deaths will not go unheeded.



Apollo 1 27 January, 1967 - 1831 hours: "Fire in the spacecraft!"

Apollo 1 **was** to be the first mission of the new Apollo program, the program that would take us to the Moon and back. After many delays, the Apollo 1 flight was set to take place on 21 February 1967. The crew included: **Lt Col Virgil 'Gus' Grissom**, USAF, who would have been the first to flight into space three times. It was stated that he would have been chosen to be the first man to set foot on the Moon; **Lt Col Edward White II**, USAF, who had been the first American to "walk in space" on Gemini 4; and **Lt Cdr Roger Chaffee**, USN, who was to be making his first flight into space.

The final major pre-mission test called the 'Plugs out' test would have the spacecraft sealed and running on it's own power. There were communication delays, causing

Grissom to bark out, "How do you expect us to talk on the Moon when we can't talk between ... buildings?" There was also a sour odor coming through the 100% oxygen environmental system. Frustration levels were high as the test was going on for hours. Suddenly, the call came over the radio:

"Fire in the Spacecraft! Get us out! We're burning up!"

These were the last words from the Astronauts. In the pure oxygen environment, a spark somewhere in the miles of wiring set off a flash fire that was so intense it ruptured the hull of the spacecraft, and the Astronauts perished very quickly, long before help could arrive. White and Grissom were found trying to turn the hatch latching system.



AEROSPACE EDUCATION

NASA'S DARKEST HOURS ...continued from previous page

Space Shuttle Challenger (51-L) 28 January, 1986 Not Fire, but Ice

By the start of 1986, NASA had already launched 24 Space Shuttle missions. Back in the early days of the Mercury, Gemini, and Apollo missions the whole country -- and much of the world -- breathlessly watched every launch and recovery, by 1986, though, for many it had become "old hat." The missions were scarcely considered worthy of mention on the nightly news. But America was about to be shaken to the core. NASA, trying to draw public interest back into the space program, had announced the *Educator in Space Program*. A teacher would give lessons from space while teachers on the ground would amplify the material. After a lengthy search, the educator was announced: **S. Christa McAuliffe** would fly! Her material was *exploration*, based on following the expeditions of early U.S. pioneers as they trekked across the continent. Suddenly, America was interested in Space again!



Florida, where the warm weather invites tourists, was unseasonably cold that January. On the 26th, the temperature dipped below freezing, and the launch was delayed. Based on predictions of cold for the 27th, the launch date was set for the 28th. (As it turned out, the 27th would have been the perfect day to fly.) Temperatures were cold on the 28th; teams checking the orbiter saw icicles hanging from the shuttle stack. Unfortunately, the solid rocket boosters were made of 4 segments with rubber 'O-rings' placed between the segments. Tragically, rubber does not do well in freezing temperatures. (Try placing a rubber band in the freezer for a few days, then try to stretch it. It will break apart!) Although the solid rocket booster manufacturer placed frantic calls to stop the launch in the cold, NASA management decided to launch anyway. And the O-rings broke under the great pressure build-up during launch, releasing burning flames which destroyed the shuttle 73 seconds after the launch. The crew did not survive. They were: **Lt Col Dick Scobee**, USAF; **Cdr Michael Smith**, USN; **Lt Col Ellison Onizuka**, USAF; **Dr. Ron McNair**; **Dr. Judy Resnik**; **Mr. Greg Jarvis**; and **Ms. Christa McAuliffe**.

Space Shuttle Columbia (STS 107) 1 February, 2003 Foam!

By 2003 the Space Shuttle Program was doing well. The International Space Station (ISS) was nearly completed and NASA was doing science! The Space Shuttle Columbia had been the first shuttle to fly, and was the only one that could not dock with ISS. On STS 107's flight, it was to orbit the Earth, doing science research. The External Tank (the orange tank) was insulated in foam. Throughout the Space Shuttle program, there was always a concern of the foam falling off the tank during launch. Think of the tank as a large thermos bottle. The foam was to keep liquid oxygen and liquid hydrogen cold during launch. These two liquids fueled the main engines. While previous Shuttles past had chunks of foam that fell off the tank, none did extensive damage. STS 107 launched on 1 February 2003. On this day, a suitcase sized piece of foam struck the reinforced carbon leading edge of the wing, causing a hole. Keep in mind that the shuttle has incredible thrust, vibration, and acceleration at launch. STS 107 completed all of their scientific research for the mission, unknowing that the falling foam during the launch had damaged the insulation protecting their spacecraft. Even had they known, with no way to dock with the ISS, the crew was doomed.



Lost were: Lt Col Rick Husband, USAF; Cdr Willie McCool, USN; Dr. Michael Anderson; Dr. Laurel Clark; Dr. Dave Brown; Dr. Kalpana Chawla; and Mr. Ilian Ramon.

Let us forever honor and remember these 17 valiant astronauts and scientists who risked, and lost, their lives to advance our knowledge of space.

AEROSPACE EDUCATION

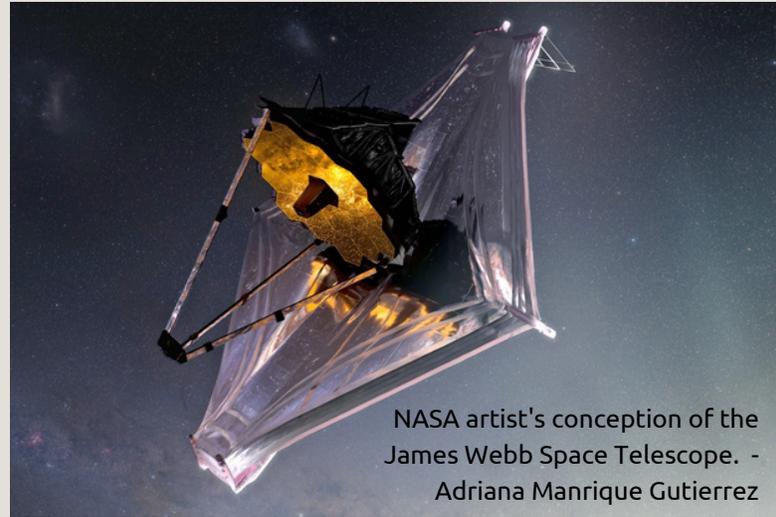
THE JAMES WEBB SPACE TELESCOPE REACHES FINAL ORBIT

1,000,000 MILES FROM EARTH, IT STARTS BY SNAPPING A SELFIE!

By Capt Van Henson

NASA's James Webb Space Telescope (JWST), launched on Christmas Day 2021, has reached its final position, approximately 1,000,000 miles from Earth. NASA announced on January 25 that the telescope had successfully completed its final post-launch course correction, and was starting a lengthy process to align its huge primary mirror, the smaller secondary mirror, and the cameras that will capture images from the farthest reaches of the universe. Because the galaxies, star clusters, and deep space phenomena it will see are so astonishingly far away, it will also capture cosmic events that occurred in the very distant past, more than 13 billion years ago.

The alignment began shortly after the launch. Over the course of several weeks of flight as it traveled to its final destination, the primary mirror, 21 feet across and comprising 18 gold-plated hexagonal beryllium sections, had to be unfolded from the careful packing (to withstand the forces of the launch), positioned, and perfectly aligned.



NASA artist's conception of the James Webb Space Telescope. - Adriana Manrique Gutierrez

One would think that the first images beamed back would be a momentous occasion, and that to Earth they should be of something spectacular. After all, for decades now we have been treated to the spectacular images the Hubble space telescope has produced: the Pillars of Creation, the Butterfly Nebula, the Tadpole Galaxy, the Mice Galaxies, the Helix Nebula, and many others.

In fact, however, the first images sent back from JWST are remarkably mundane -- a selfie of the primary mirror (actually, numerous selfies, each focused on one of the hexagonal mirror segments). Boring, given what we are used to from Hubble! But absolutely essential to ensure the telescope will function properly.



Pillars of Creation



Butterfly Nebula

NASA Images

What's different about JWST?

JWST is an infrared telescope, and can "see" wavelengths up to 30,000 nanometers (compared to Hubble's 1600 nanometers). Since the light from the distant galaxies and stars get red-shifted due to expansion of the universe, JWST we can probe much further back into the past. JWST might see the first galaxies that formed after the Big Bang!

Importantly, JWST needs to be "right" from the start. Hubble needed re-alignment and repair almost immediately, and the Space Shuttle visited for initial repairs. The Space Shuttle visited twice more for repairs and improvements (more than doubling the expected lifespan of Hubble!). But Hubble is only 300 miles from Earth, and the Shuttle *could* visit it. JWST is 1,000,000 miles from Earth; the repairman isn't coming! But the improvement in the imagery, and the secrets that JWST will unlock, will be worth the wait and extra expense required to get it right the first time.



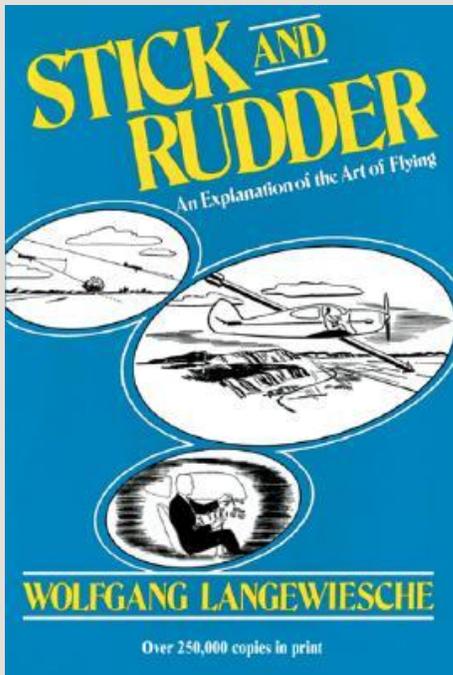
Selfie of the primary mirror.
 Photo by NASA.

AEROSPACE EDUCATION

**AEROSPACE EDUCATION READING CORNER:
 "STICK AND RUDDER -- AN EXPLANATION OF THE ART OF FLYING"**

BY WOLFGANG LANGEWIESCHE

REVIEW BY CAPT V. HENSON



AE Editor's Note: *I am an aficionado of books on aviation and space, and plan to include, each month, a brief description/review of an AE related book. Review contributions welcome!*

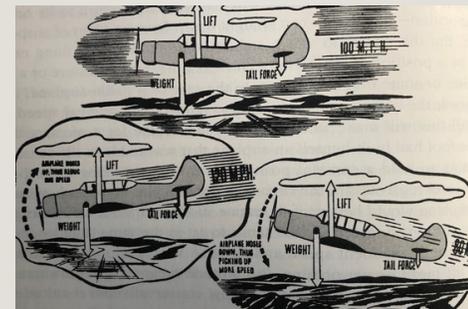
"*Stick and Rudder*" was first published in 1944, seventy-eight years ago. It is a classic, a book that its many devotees will say is *the* indispensable volume that no pilot can be without, and that every pilot should re-read every few years. Its detractors, fewer in number but vociferous and loud, will say is "overhyped and dumb" and "eloquent malarkey."

I fall into the former camp. I think the book is terrific. Now, it won't tell you anything you don't know about instrument approach plates, or leaning the mixture, military operational airways, or reading a sectional. In fact it won't tell you anything at all about those topics because they have nothing to do with flying, and this is a book about flying. Those other things, and a myriad of other topics not covered, are about managing the flight. This book is about *how to fly*.

Langewiesche does take some strong and unconventional positions. For example, he asserts that "the throttle controls up and down while the stick controls speed." (This point quickly become obvious to anyone who learns to fly, but it is non-intuitive.) But he feels strongly enough about the point that he refuses to use the term "elevator" for the control surface controlled by forward or aft stick, instead calling it, through the book, as the "flipper." But as jarring as that is to the ear, he makes a compelling case.

What "S & R" does is answer simple questions with simple, well-described answers and relate them all to the process of flying. Some of his favorite points:

- Paradox of the glide: point the nose down less steeply and you descend more steeply. Point the nose down more steeply, you can glide farther.
- What is the rudder for? The rudder does not turn the airplane.
- "The spot that does not move." A foolproof method for landing over pole lines and trees.
- The invisible secret of heavier-than-air flight: the Angle of Attack.



All those points, and many, many more, are covered in plain, easily digestible language (once you get past "flipper") without deep technical discussions that bog down so many other books. It was written at a time when airplanes were much simpler, and many people flew "by the seat of their pants." It focuses only on factors that affect flight, and strives to make the reader into a new (or a better) pilot.

It is short, readable, enjoyable, and has just enough explanation to be convincing but not so much to become overbearing. How can you go wrong?

Definitely a book worth owning, and reading a number of times.

AIRCREW EDUCATION

CAP MOUNTAIN FLYING CERTIFICATION (MFC)

BY CAPT KEITH BRETON - GP. 2 STANDARDS AND EVALUATION OFFICER (DOV)

For CAP Mission Pilots, the Mountain Flying Certification is the pinnacle (pun-intended) of qualifications, at least in states like California with lots of mountainous terrain. (Note: This is an emergency services rating—it is not the Form 5 mountain endorsement.) For a given mission, the Incident Commander (IC) decides if the operational area requires that mission pilots be MFC rated to participate. This was the case recently for the missing hiker mission northwest of Lake Tahoe.

What's required? First, you must be a CAP Mission Pilot (MP) and then you must complete the Mountain Flying (aka Mountain Fury) Course. This consists of a thorough ground training component with extensive focus on weather and aircraft performance (available in Axis). Next comes four sorties flown with a mountain flying instructor. Finally, a check ride is required to grant the MFC rating.

Each sortie consists of detailed pre- and post-flight briefings including preparation of performance data sheets—based on current weather—covering climb rates at various altitudes, turn radius at various speeds and bank angles.

Attaining the MFC is a challenging program, but it's fun too! The first two sorties can be flown locally as you are practicing the various maneuvers such as canyon turns and climb performance at various altitudes to both experience and record the difference in aircraft performance.

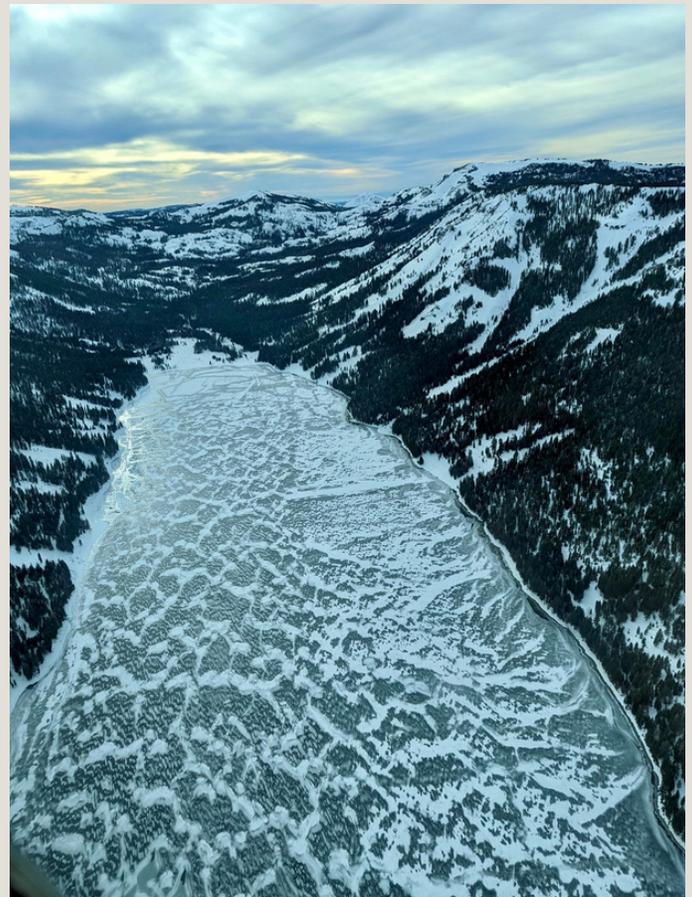
The final two sorties are flown in the mountains where you apply everything you have learned by operating out of high-altitude airports and practicing search procedures over mountainous terrain; all while keeping a close eye on changing weather conditions to assess the ability to complete the mission. Canyon searching and mountain "drainage" path searches challenge your decision making skills as much as your flying skills.

Planning ahead is essential to avoid getting stuck in a "dead-end" that you can't climb or turn out of.

Continued...



CAP483 on the ground at Truckee Airport (KTRK). Picture by Maj George Michelogiannakis.



Conducting a canyon search in the area near Mount Lola (SFO75B). Picture by Maj George Michelogiannakis.

AIRCREW EDUCATION

CAP MOUNTAIN FLYING CERTIFICATION (MFC) ... CONTINUED

BY CAPT KEITH BRETON - GP. 2 STANDARDS AND EVALUATION OFFICER (DOV)

Maj Michelogiannakis was Capt Breton's instructor for the MFC training program. Scheduling forced them to split up the sorties. The first two sorties were accomplished in November in the relative warmth of the Santa Rosa area. Capt Breton completed the final two sorties in January in the Truckee area. Capt Breton said as he reflected on that flight, "Yes, it was cold!"

On the MFC training, Capt Breton mentioned that, "I found the program to be challenging and very worthwhile. There is increased risk in flying—and accomplishing a search mission—in mountainous terrain and after completing the course I have additional tools and skills to increase the safety of this type of mission. I now await my check ride to achieve the MFC rating."

Capt Breton also said that, "Hopefully this will be successfully accomplished by the time you read this."



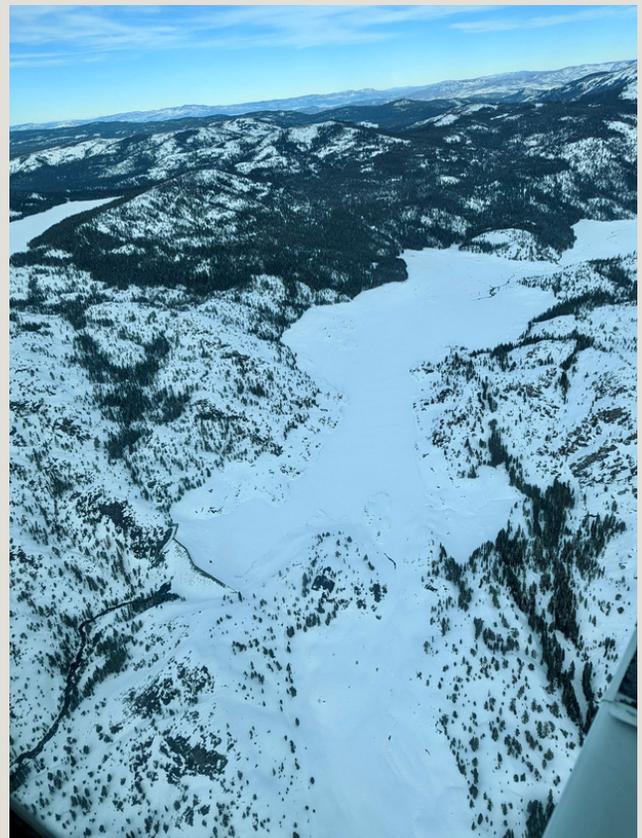
Following a ridgeline in the area near Mount Lola (SFO75B). Picture by Maj George Michelogiannakis.



From L to R: Maj Michelogiannakis and Capt Breton training near the Sierraville Dearwater Airport, in CAP483. Picture by Maj George Michelogiannakis.

Previously the MFC training was organized at the Wing level but the pandemic has delayed that for a couple of years and the new approach may be to conduct it at the group level. We will publish more details as we know them.

Stay tuned.



Conducting a canyon search in the area near Mount Lola (SFO75B). Picture by Maj George Michelogiannakis.

AIRCREW EDUCATION

BACK TO BASICS - OIL

CIVIL AIR PATROL STAN/EVAL NEWSLETTER - FEBRUARY 2022 PG. 4-6

The oil filter is normally changed when the oil is changed. Just like your car, oil gets dirty and so must be changed. Typically, the oil and filter are changed every 50 hours of engine operation. But you may have to change oil more frequently if operating in very dusty conditions.

Our Cessna's have both an oil pressure gauge and an oil temperature gauge which need to be monitored. Low or zero oil pressure indicates a pump failure causing the engine to self-destruct quickly. You have the option of either shutting the engine down to try and prevent damage or just letting the engine shut down itself when it self-destructs (go for option 1 if possible). There will be zero oil pressure when you first start the engine but after starting you should see the pressure build immediately.

The rule of thumb is to shut the engine down after starting if the oil pressure hasn't come up within 30-60 seconds (see your POH). In any event, always keep the RPMs low (< 1000 RPM) until the engine has warmed up sufficiently to ensure the oil is properly circulating (see your POH). High RPM on a cold engine ensures excessive wear on the engine and premature failure. There are cases where oil pressure can be too high indicating an oil pressure relief valve is stuck. Although this is not as catastrophic as no oil pressure you need to shut the engine down as soon as possible and get it fixed.

Equally important is the oil temperature gauge. When the oil gets too hot that means the engine is too hot and damage will occur if not taken care of. But before shutting the engine down, try things like opening the cowl flaps, reducing power, and enriching the mixture to see if you can get the temps down. If not, you need to land and shut the engine down. Often high oil temps indicate a loss of oil so check your dipstick. You may have a leak. On engine startup, the oil temps will be cold. We like the temps to be in the green before takeoff or whatever the POH recommends. On our Cessna's it is not required that oil temp be in the green IF the engine run up went smoothly but it can't be pegged at zero. It must have moved off the lower limit if not in the green. If it's cold outside and the engine oil temperature is just not moving, try closing the cowl flaps and see if that helps.

One other problem with high temps is that conventional non-synthetic oil starts to break down about 240 degrees F. Beyond that it will turn into sludge and not lubricate properly. Your only option is to get an oil change at that point.

If you see during flight that the oil temps are increasing and the oil pressure is falling, you are about to have a catastrophic engine failure (don't ask me how I know this). You need to find some place to land ASAP and expect it to be without power (and oil streaming on the windshield). If you are in a twin, shut the offending engine down immediately lest you trash it.

On preflight, don't just check the dipstick for the right oil level but look for oil outside on the fuselage. Although oil on the belly is not unusual, a prodigious amount of oil or oil sprayed in a new place could presage an engine failure. Often a cracked cylinder or other such damage first manifests as an oil leak.

As a practical matter, it is unwise to "top off" the oil. Most GA airplanes will run just fine down a quart or two. When you fill up the oil, the first quart of oil will get deposited quickly on the belly. So, make sure you have enough oil but don't top it off unless you like to waste oil.



AIRCREW EDUCATION

NHQ OPERATIONS NOTE: TOWBARS

**CIVIL AIR PATROL STAN/EVAL
 NEWSLETTER – FEBRUARY 2022 - PG. 6**

CAP has had several incidents where aircraft have started engines with the towbar still attached. That usually ends up with a prop strike, engine tear down and embarrassment for the flight crew.

We had one case where the tow bar stayed attached, there was no prop strike, and the crew successfully completed a long cross country with the tow bar still attached on engine shutdown.

In case you never thought this happens to Part 121 operators [click Here](#). Read the full story [Here](#).

**CAP PILOT AND MISSION OBSERVER
 INITIALS AND RENEWALS**

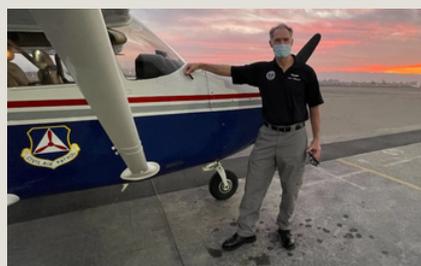
Renewal:

Lt Ondrej Podlaha renewed his CAP Pilot with Capt Keith Breton on 17 Dec 21.



Renewal:

Alexander B Arnoldy, renewed CAP Pilot with Capt Keith Breton, on 31 Dec 21



Renewal:

Capt Karin Hollerbach renewed her CAP Pilot with Capt Keith Breton on 1 Jan 22.



**CAP PILOT AND MISSION OBSERVER
 INITIALS AND RENEWALS**

Initial:

Lt Jeff Ferland completed his Initial Glider Pilot with Capt Bradley Powell from NVWG, on 8 Jan 22



Initial:

Lt Erik Klavon completed his Instructor Pilot add-on with Maj Jeff Ironfield on 28 Jan 22.



Renewal:

Maj Stephen Renwick renewed his CAP Pilot after almost 19 years with Maj Jeff Ironfield on 30 Jan 22.



Renewal:

Maj Paul Kubiak, renewed his CAP Mission Observer with Maj George Michelogiannakis, on 30 Jan 22.



Renewal:

Capt Eric Chaote renewed his CAP Pilot with Lt Col Noel Luneau on 30 Dec 21.



AIRCREW EDUCATION

DOV LINKS

PROFESSIONAL EDUCATION

Aircrew Education



1. Prepping For Darkness
 - o AVweb - 2/2/22
 - o [Link Here](#)
2. Webinar: 2021 An Emergent Year in GA Safety
 - o AOPA - Air Safety Institute - 12/16/21
 - o [Link Here](#)
3. This Wintertime Illusion Can Cause Accidents On A VFR Day
 - o [_Boldmethod](#) - 2/8/22
 - o [Link Here](#)
4. The Aerodynamics Of A Steep Turn
 - o [_Boldmethod](#) - 2/10/22
 - o [Link Here](#)
5. Altitude Deviations and Misperceptions
 - o [_NASA's Callback](#) - Issue 504/January 2022
 - o [_Link Here](#)
6. BasicMed Is turning Five
 - o FAA - Safety Briefing - Jan/Feb 2022 - Page 8
 - o [Link Here](#)
7. Ensuring *I'm SAFE* for Every Drone Flight
 - o FAA - Safety Briefing - Jan/Feb 2022 - Page 27
 - o [Link Here](#)
8. The Startle Response in 57 Seconds
 - o FAA From The Flight Deck - 1/19/22
 - o [Link Here](#)

Accident/Incident Case Studies

1. Accident Probe: Course Reversal In IMC
 - o AVweb - 2/7/22
 - o [Link Here](#)
2. Accident Case Study - Emergency Management
 - o AOPA's Air Safety Institute - 2/6/2015
 - o [Link Here](#)
3. The Excursion
 - o SSA - Safety and Training
 - o [Link Here](#)

Aircrew Professionalism

1. CAP Aircrew Professionalism
 - o NHQ Aircraft Operations
 - o [Link Here](#)

GROUP 2 CAP AIRCRAFT

SEEN THIS MONTH



CAP454 seen with CARDA handler Ivan Gallo, his search dog, and mission pilot Capt Michael Gross at Oakland Airport.



CAP483 with CARDA handler Jerry Del Rio, search dog Zoom, and mission pilot Capt Karin Hollerbach at Buchanan Airport.



Group 2 sUAS with Capt Louise Mateos and Lt Col Dennis Matarrese at Lime Ride Open Space.

EDUCATION AND TRAINING

COMPLETING LEVEL 2: BENJAMIN DAVIS AWARD

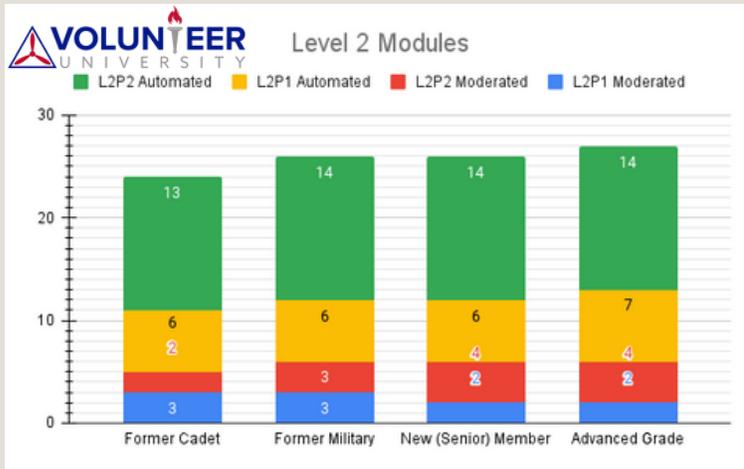
BY CAPT RICHARD WEST

Level 2 of Civil Air Patrol's Senior Member Education and Training Program is focused on developing competent members to participate at the squadron level. All members who actively serve within their unit and the three core missions of CAP have the skills and knowledge needed to complete Level 2 and earn their Benjamin Davis Award. Unfortunately, over 40% of members within Group 2 have yet to reach this milestone.

With the changes introduced in August 2020, completing Level 2 and earning the Benjamin Davis Award is simpler and more engaging. Level 2 is split into two parts: Part 1 is required for promotion to second lieutenant (or an advance grade), and Part 2 is required for promotion to first lieutenant. However, both parts can be pursued in parallel with minimal additional effort.

Level 2 Checklist

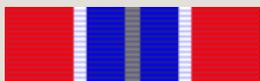
- Automated Modules
- Moderated Modules
- Yeager Award
- Technician Rating



Level 2 Academics

Level 2 is unique in that it is split into four learning paths: Former Cadet, Former Military, New Member, and Advanced Grade. The path a member is assigned to dictates which modules they need to complete. Modules come in two types: automated modules that can be completed through the Axis LMS, and moderated modules which require interacting with other students and instructors. Options for completing moderated modules include registering for an online cohort, attending a Virtual In-Residence session, or California Wing's Level 2 Day. Group 2 is hosting a virtual Level 2 Day on 27 Feb.

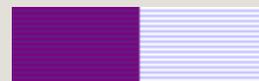
Yeager Award



The Yeager Award honors Brig Gen Chuck E Yeager, the first person to break the sound barrier. The award is given on successful completion of a one-hundred question, open-book test on Aerospace: The Journey of Flight 3rd Ed. For details on how to take the Yeager test, watch Maj Mark Fridell's excellent how-to video.

Earning the Yeager Award is required for Level 2 Part 2, but it can be done as soon as one joins CAP.

Technician Rating



Civil Air Patrol offers more than two-dozen squadron-level duty assignments. Members will be enrolled in the specialty track(s) associated with their duty assignment(s). Earning a Technician rating within a specialty track signifies a member has a good understanding of their duty assignment and can execute said assignment at the squadron level. Specialty Track pamphlets outline the requirements for the Technician rating and beyond.

EDUCATION AND TRAINING

GROUP 2 EDUCATION AND TRAINING ACHIEVEMENTS

BY CAPT RICHARD WEST

Dec & Jan Senior Member E&T Program Levels

1st Lt Puppo, Vincenzo (649374) [Sq188]

Level 2 — Benjamin O. Davis, Jr. Award
2021-12-19

SM Pegis, Nicholas R (222563) [Sq192]

Level 1 — Membership Award
2021-12-01

SM Gonzenbach, Aaron M (674988) [Sq44]

Level 1 — Membership Award
2021-12-02

SM Wlad, Joseph M (676637) [Sq188]

Level 1 — Membership Award
2021-12-07

SM Nguyen, Jonathan V (676029) [Sq80]

Level 1 — Membership Award
2021-12-13

SM Le, Kevin V (677289) [Sq80]

Level 1 — Membership Award
2021-12-22

SM Paterson, Brie-Anne M (675245) [Sq156]

Level 1 — Membership Award
2022-01-17

SM Summers, James F (667791) [Sq13]

Level 1 — Membership Award
2022-01-25

SM Didier, Samuel R (677777) [Sq156]

Level 1 — Membership Award
2022-01-26

Dec & Jan Specialty Track Ratings

Capt Collins, Stephen J (610399) [Sq192]

Aerospace — Master
2022-01-06

Lt Col Luneau, Noel P (454201) [Sq156]

Command — Master
2022-01-07

Capt Henson, Van E (534976) [Sq156]

Aerospace — Senior
2021-12-06

Lt Col Lawson, Shawn O (284815) [Gp2]

Personnel — Senior
2022-01-25

2d Lt Sheley, Cabot L (643797) [Sq192]

Aerospace — Senior
2022-01-26

1st Lt Salimi, Margaret (633943) [Sq188]

Communications — Technician
2021-12-16

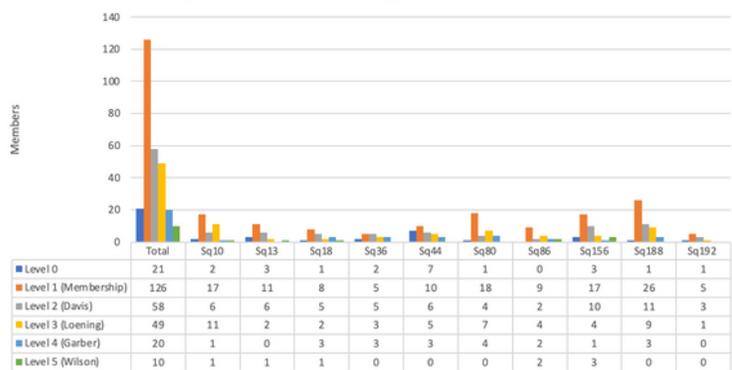
2d Lt Baldwin, Terry A (577114) [Sq188]

Safety — Technician
2021-12-27

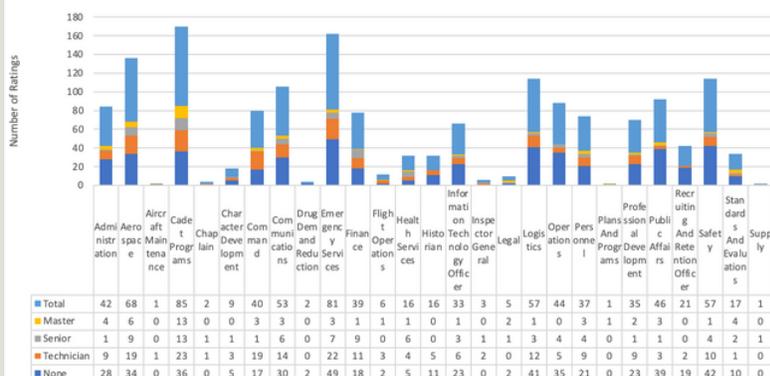
Maj Larkin, Brian J (330441) [Sq86]

Safety — Technician
2021-12-31

Group 2 E&T Senior Member Program Levels as of 31 Jan 21



Specialty Track Ratings as of 31 Jan 21



FUN AND GAMES

MYSTERY WORDSEARCH

BY CAPT RICHARD WEST

Up for a challenge? How about a wordsearch without an answer key? There are 17 items hidden in this grid which are connected by a common theme. The hidden items can appear horizontally, vertically, and diagonally; possibly in reverse.

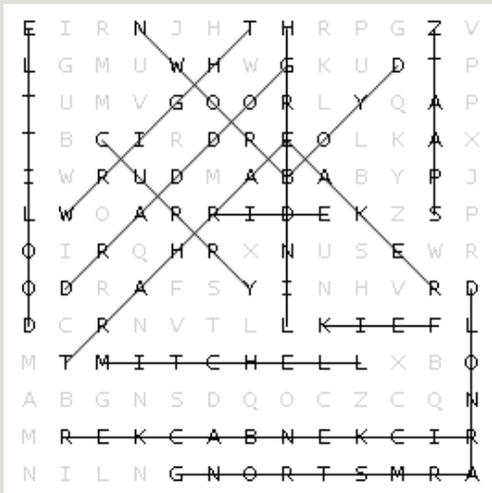


DECEMBER MYSTERY WORDSEARCH

BY CAPT RICHARD WEST

The theme of December's Mystery Wordsearch? Cadet Achievements

- | | |
|--------------|-----------|
| Curry | Armstrong |
| Arnold | Mitchell |
| Feik | Brown |
| Wright | Earhart |
| Rickenbacker | Boyd |
| Lindbergh | Ride |
| Doolittle | Eaker |
| Goddard | Spatz |



DIVERSITY

CAP AE TEAM PROVIDES BLACK HISTORY MONTH LESSONS



Diversity has been woven into the fabric of Civil Air Patrol since its founding in 1941. With that in mind, CAP's Aerospace Education team offers these Black History Month Lessons. Click [Here](#) for the lessons.

In addition, CAP's next curriculum booklet will focus on the story and achievements of the Tuskegee Airmen (cover pictured).

CAP is connecting the past with the future by embracing and perpetuating the legacy of the Tuskegee Airmen via a new middle school book featuring some of these famed heroes. It is hoped that young people will be motivated to succeed after reading the inspirational personal and professional stories of this unique group of individuals. From pilots to aviation mechanics, the Tuskegee Airmen influenced our nation and the world. See a sample lesson on Gen. Chappie James [HERE](#). The book will be available 22 February, 2022 in CAP's member portal, eServices/Aerospace Education/AE Downloads and Resources,. Find out more about the Tuskegee Airmen at [Tuskegee Airmen, Inc.](#)

[Check out CAP's Vintage Chappie James booklet!](#)

Resource Links:

Click [Here](#) to find additional Black History STEM/aerospace lesson and information resources from a number of organizations. The NASA list is only a sampling of wide range of tools available there.

